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May 14, 2003

**MARKS & CLERK**

Box 957  
Station B  
OTTAWA Ontario  
K1P 5S7

**Application No.** : **2,313,855**  
**Owner** : NGK INSULATORS, LTD.  
**Title** : **LITHIUM SECONDARY BATTERY**  
**Classification** : H01M-4/38  
**Your File No.** : **99410-3**  
**Examiner** : Irina Kargina

IN ACCORDANCE WITH SUBSECTION 30(2) OF THE PATENT RULES, YOU ARE HEREBY NOTIFIED OF A REQUISITION BY THE EXAMINER. IN ORDER TO AVOID ABANDONMENT UNDER PARAGRAPH 73(1)(A) OF THE PATENT ACT, A WRITTEN REPLY MUST BE RECEIVED WITHIN 6 MONTHS AFTER THE ABOVE DATE.

This application has been examined as originally filed.

The number of claims in this application is 6.

A search of the prior art has revealed the following:

References Applied:

United States Patents

US 5,084,366	January 28, 1992	Toyoguchi
US 5,240,794	August 31, 1993	Thackeray et al

Toyoguchi discloses a non-aqueous electrolyte secondary battery wherein lithium manganese oxide having a spinel structure is used as a positive electrode active material. Example 1 of US'366 teaches that  $\text{LiMn}_2\text{O}_4$  was produced by mixing  $\text{Li}_2\text{CO}_3$  and  $\text{Mn}_3\text{O}_4$  (a mixture of a salt and an oxide) in a molar ratio of 3 to 4, and then firing the mixture in air at a temperature of 900°C for 10 hours.

Thackeray et al disclose an electrochemical cell of the lithium/manganese oxide type. Example 4 of US'794 teaches that  $\text{LiMn}_2\text{O}_4$  was prepared by heating a mixture of  $\text{Li}_2\text{CO}_3$  and  $\text{MnCO}_3$  (a mixture of two salts) having a Li:Mn atomic ratio of 1:2 in air at 900°C for 10 hours.

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O P I C  C I P C

**The examiner has identified the following defects in the application:**

Claims 1-4 do not comply with Paragraph 28.2(1)(b) of the Patent Act. US'366 and US'794 disclosed the claimed subject matter before the claim dates.

The cited references are silent with respect to thermal properties of spinel lithium manganese oxides disclosed therein. However, according to the description of the present application (p.3), it appears that all that is required to obtain lithium manganese oxide of a spinel structure having a thermal property specified in claim 1 ( $P_2/P_1$  is under 1), is to use a manufacturing process of claim 4. This manufacturing process is disclosed in prior art documents, therefore spinel lithium manganese oxides of US'366 and US'794 would have the same thermal property as lithium manganese oxide (spinel) of the present application.

It appears that Tables 1-3 are not in the description. The applicant is requisitioned to make an amendment.

Under Section 76 of the Patent Rules, every trade-mark must be identified as a trade-mark. If "Thermoflex" on page 14 is a trade-mark, it must be so identified.

In view of the foregoing defects, the applicant is requisitioned to amend the application in order to comply with the Patent Act and the Patent Rules or to provide arguments as to why the application does comply.

Under Section 29 of the Patent Rules, applicant is requisitioned to provide an identification of any prior art cited in respect of the corresponding United States and European Patent Office applications and the patent numbers, if granted. Amendment to avoid references cited abroad may expedite the prosecution. If the particulars are not available to the applicant, the reason why must be stated.

Under Section 29 of the Patent Rules, applicant is requisitioned to provide particulars of conflict, opposition, re-examination or similar proceedings in which the corresponding United States and European Patent Office applications may have been involved.

Irina Kargina  
Patent Examiner  
(819) 997-3059  
2313855A.ika